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## REMARKS

Claims 1-19 are pending in this application. Claims 1-19 have been finally rejected under 35 USC 103 as being unpatentable over Smith in view of Cook.

Claims 1-19 are cancelled herein, and new claims 20 and 21 are presented for examination in conjunction with a Request for Continued Examination of the application. New method claim 20 is directed to a method of increasing the thermal conductivity of an electrically insulating epoxy material without compromising the electrical insulating properties of the material. New apparatus claim 21 is directed to a polymer formed by the method of claim 20.

The LCT epoxy materials of the cited prior art Smith patent provide significant advantages when compared to traditional epoxy materials for high voltage electrical insulation applications. However, improved thermal conductivity remained a desired property in such materials at the time of the present invention. In view of the prior prosecution history of this application, the applicant appreciates that the Examiner may consider the combination of the prior art Cook patent with the Smith patent when examining the patentability of the newly presented claims. The applicant also appreciates that certain arguments have previously been presented against the combination of Cook with Smith, and that these arguments have been found to be unpersuasive. However, in view of the specific limitations of the new claims related to the crystal structure of the resulting polymer, additional aspects of the teaching of Cook are highlighted herein. These newly discussed aspects of Cook argue against the combination of Cook with Smith to arrive at the newly pending claims, as follows.

First, the Cook patent specifically teaches that the very "nature of the invention" of Cook is the synthesis of composites by the reaction of alumoxanes with low molecular weight polymer precursors." (see column 17, lines 55-59) The traditional epoxies discussed by Cook fall into this category. Importantly, however, the LCT epoxy of Smith is a high molecular weight polymer. Thus, Cook on its face teaches away from any application to the LCT epoxy of Smith.

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Second, when reviewing the processes described by Cook, it is apparent that he is not concerned with maintaining the crystalline structure of a high molecular weight polymer such as the LCT epoxy of Smith. The improved mechanical and electrical properties of an LCT epoxy material when compared to those of a traditional epoxy material are known to result from the layered nature of the crystalline microstructure of the LCT material. The newly presented claims specifically include limitations directed to homogeneous alumoxane-LCT-epoxy polymers that retain the layered nature of the LCT-epoxy resin and that demonstrate levels of thermal conductivity not previously achieved in combination with the claimed level of electrical resistance.

It is well established that no *prima facie* case for obviousness can be made if a combination of two references destroys the functionality of the modified reference. [see for example *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984)]. Thus, any modification of the Smith LCT epoxy formulation that would destroy the layered nature of the crystal structure of the material would be undesirable because it would destroy the functionality of the epoxy for high voltage electrical insulation applications.

The Cook patent describes a variety of embodiments of low molecular weight alumoxane polymers, including alumoxane epoxy. However, if the processes and materials described by Cook were to be applied to the LCT epoxy of Smith, the result would be undesirable for electrical insulation applications because of the following chemical reactions, which are described in the attached Declaration of James D. B. Smith under 37 CFR 1.132.

- the amine functionalized carboxylate-alumoxanes used by Cook to prepare his alumoxane-epoxy materials exhibit reactivity with LCT epoxy that would cause disruption of the crystalline structure.

- the formaldehyde used by Cook at column 10, line 59 is undesirable because it is highly volatile and reactively not compatible with the Smith LCT resin compounds.

- the water and waterborne systems of Examples 34, 36, 38 and 40 of Cook and the ethanol and cold water drop of Example 41 of Cook would destroy the

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functionality of the Smith LCT epoxy because of its volatility and hydrolysis of anhydride compounds.

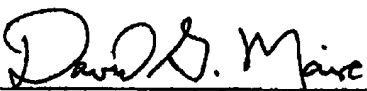
- the alternatives to covalent bonding that are described at column 17, lines 10-15 of Cook, including hydrogen bonding, acid-base interactions and charge transfer interactions, would destroy the functionality of the Smith LCT epoxy insulation because of the formation of ionic species that would have a detrimental effect on the high voltage electrical insulating properties by increasing the dissipation factor and reducing the electrical resistivity.

Thus, a person skilled in the art at the time of the present invention would not be motivated to modify the LCT epoxy of Smith with the processes taught in Cook to arrive at the claimed invention because 1) Cook on its face is directed only to low molecular weight polymer precursors, and 2) the functionality of the high molecular weight LCT epoxy of Smith would be destroyed for electrical insulation applications by the chemical reactions described in Cook. Accordingly, no *prima facie* case can be made for the combination of Cook and Smith, and the newly presented claims 20 and 21 are believed to be in condition for allowance.

Reconsideration of the amended application in light of the above Remarks and allowance of claims 20 and 21 are respectfully requested.

The undersigned attorney hereby asserts under 37 CFR 1.34 that he is authorized to represent the applicant in this matter by direction of the assignee of the present invention.

Respectfully submitted,



David G. Maire (Reg. No. 34,865)

Beusse Wolter Sanks Mora & Maire, P.A.  
390 North Orange Ave., Suite 2500  
Orlando, FL 32801  
Telephone: 407-926-7704